OSD RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

APPROPRIATION/ BUDGET ACTIVITY	PE NUMBER AND TITLE
RDTE, Defense Wide BA# 6	**0605130D8Z - Foreign Comparative Testing (FCT)**

COST ($ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate					
P130 Foreign Comparative Testing (FCT)	30.811	34.718	35.054					

A. Mission Description and Budget Item Justification:

The Foreign Comparative Testing (FCT) program supports the warfighter by leveraging mature technologies and equipment from allied nations and coalition partners to satisfy U.S. defense requirements, thereby accelerating the U.S. acquisition process and lowering development costs. Authorized by Title 10, U.S. Code, Section 2350a(g), the FCT Program is managed by the Deputy Under Secretary of Defense (Advanced Systems & Concepts), Comparative Testing Office. FCT projects are nominated by the Services and U.S. Special Operations Command (USSOCOM) each year. Evaluation processes for project selection include a detailed review to confirm the proposed item addresses valid requirements, a thorough market survey, and development of a viable acquisition strategy. A 7-day Congressional notification of the intent to fund the projects is required, prior to the issuance of funds to the Services/SOCOM for execution.

Since the program's inception in 1980, OSD has initiated 899 projects; 509 projects have been completed to date. Of the 272 evaluations that met the sponsors' requirements, 197 led to procurements worth approximately $8.840 billion in FY 2008 constant year dollars. With an Office of Secretary of Defense (OSD) investment of about $1.100 billion, the FCT program has realized an estimated RDT&E cost avoidance of $7.370 billion in FY 2008 constant year dollars.

The FCT program is frequently a catalyst for teaming or other business relationships between foreign and U.S. industries; many successful FCT projects result in arrangements for the licensed production of the qualified foreign item in the U.S. Other nations recognize the long-term value of such practices for competing in the U.S. defense market and the resultant strengthening of the "two-way street" in defense procurement. For the U.S., the result often means the creation of jobs and contributions to local economies. To date, companies across 33 states have benefited from FCT projects.

Final selection of FY 2010 FCT new start projects will be determined in September 2009.

This Research, Development, Test and Evaluation (RDT&E) Category 6.5 is assigned and identified in this descriptive summary in accordance with existing DoD policy.

OSD RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

APPROPRIATION/ BUDGET ACTIVITY	PE NUMBER AND TITLE
RDTE, Defense Wide BA# 6	**0605130D8Z - Foreign Comparative Testing (FCT)**

B. Program Change Summary	FY 2008	FY 2009	FY 2010	
Previous President's Budget (FY 2008/2009)	32.634	34.910	35.719	
Current BES/President's Budget (FY 2010)	30.811	34.718	35.054	
Total Adjustments	-1.823	-0.192	-0.665	
Congressional Program Reductions				
Congressional Rescissions		-0.192		
Congressional Increases				
Reprogrammings	-1.300			
SBIR/STTR Transfer	-0.457			
Other	-0.066		-0.665	

FY 2010 change is a result of internal DoD deliberations

C. Other Program Funding Summary: Not applicable for this item.

D. Acquisition Strategy: Not applicable for this item.

E. Performance Metrics:

FY	Strategic Goals Supported	Existing Baseline	Planned Performance Improvement / Requirement Goal	Actual Performance Improvement	Planned Performance Metric / Methods of Measurement	Actual Performance Metric / Methods of Measurement
08						

Comment:

22 FY 2008 FCT Projects planned for completion.

11 FY 2009 FCT Projects planned for completion.

See R-2a project-level narratives for return on investment and technology performance metrics (i.e., KPPs).

OSD RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

APPROPRIATION/ BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDTE, Defense Wide BA# 6	**0605130D8Z - Foreign Comparative Testing (FCT)**	**P130**

COST ($ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate					
P130 Foreign Comparative Testing (FCT)	30.811	34.718	35.054					

A. Mission Description and Budget Item Justification:

The Foreign Comparative Testing (FCT) program supports the warfighter by leveraging mature technologies and equipment from allied nations and coalition partners to satisfy U.S. defense requirements, thereby accelerating the U.S. acquisition process and lowering development costs. Authorized by Title 10, U.S. Code, Section 2350a(g), the FCT Program is managed by the Deputy Under Secretary of Defense (Advanced Systems & Concepts), Comparative Testing Office. FCT projects are nominated by the Services and U.S. Special Operations Command (USSOCOM) each year. Evaluation processes for project selection include a detailed review to confirm the proposed item addresses valid requirements, a thorough market survey, and development of a viable acquisition strategy. A 7-day Congressional notification of the intent to fund the most meritorious projects is required, prior to the issuance of funds to the Services/SOCOM for execution.

Since the program's inception in 1980, OSD has initiated 899 projects; 509 projects have been completed to date. Of the 272 evaluations that met the sponsors' requirements, 197 led to procurements worth approximately $8.875 billion in FY 2008 constant year dollars. With an OSD investment of about $1.100 billion, the FCT program has realized an estimated RDT&E cost avoidance of $7.370 billion in FY 2008 constant year dollars.

The FCT program is frequently a catalyst for teaming or other business relationships between foreign and U.S. industries; many successful FCT projects result in arrangements for the licensed production of the qualified foreign item in the U.S. Other nations recognize the long-term value of such practices for competing in the U.S. defense market and the resultant strengthening of the "two-way street" in defense procurement. For the U.S., the result often means the creation of jobs and contributions to local economies. To date, companies across 33 states have benefited from FCT projects.

This Research, Development, Test and Evaluation (RDT&E) Category 6.5 is assigned and identified in this descriptive summary in accordance with existing DoD policy.

B. Accomplishments/Planned Program:

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Advanced Flight Deck Lighting System (AFDLS) (Navy)	0.902			

Outcome: A successful FCT will provide the Navy commercially developed Advanced Flight Deck Lighting (AFDL) systems to provide visual cues to pilots approaching air-capable ships for safe landings as well as lighting and status cues to deck handling crews. The AFDLs being evaluated provide Navy pilots with the increased capability to operate more effectively and safely at night because they are compatible with Night Vision Devices (NVDs). This increases the warfighters capability to operate with higher-tempo aircraft operations aboard US Navy ships during night time Littoral operations. The primary outputs and efficiencies to be demonstrated in the FCT are: (1) The AFDL technology will replace the obsolete lighting system hardware with high reliability Light Emitting Diode (LED)-based deck fixtures and status indicators that fulfill all of the new shipboard Operational Requirements Document requirements; (2) the new technology is easier to support when compared to the legacy systems and meets new ship construction requirements for Night Vision Devices (NVD) compatibility; and (3) it avoids RDT&E costs of over $50.000 million.

FY 2008 Output: Completed purchase of Advanced FDL evaluation systems. RFP was issued to three competing vendors soliciting AFDL systems. Proposals were evaluated, and purchase orders for both were signed and contracts awarded in Sep 08. Initiated planning for the laboratory and shipboard testing.

FY 2009 Planned Output: System deliveries are scheduled for 2-3Q of FY 2009 and testing will begin during 4Q FY 2009. Install systems land based ship simulator at Lakehurst Naval Air Engineering Station for qualification testing against Navy flight tests. Develop test reports.

FY 2010 Planned Output: Complete final test reports. Secure approval for production; prepare close-out report; and execute contract options for Service use. Program Management Activity (PMA)251 has budgeted Other Procurement Navy (OPN) funding to support final production documentation & logistics support of the final configurations selected for the AFDL.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Advanced Stabilized Glide Slope Indicator (ASGSI) (Navy)	0.746			

Outcome: A successful FCT will provide the Navy commercially developed Stabilized Glide Slope Indicators (SGSI) for use in providing pilots approaching air-capable ships with a color-coded indication of a safe glide slope down to hover position for landing. The SGSIs being evaluated would provide Navy pilots with the increased capability to operate more effectively at night because they are compatible with Night Vision Devices (NVDs). This increases the warfighters capability to operate with higher-tempo aircraft operations aboard US Navy ships during night time Littoral operations. The primary outputs and efficiencies to be demonstrated in the FCT are: (1) The ASGSI technology will replace the obsolete hardware with highly reliable Light Emitting Diode (LED)-based optics that meet all of the new shipboard ORD specs; (2) remove the safety threat currently impairing the pilot's ability to complete essential warfighting missions; (3) the LED-based technology is cheaper to procure and easier to maintain when compared to the legacy systems; (4) ASGI is compatible with NVDs and (4) it avoids RDT&E costs of over $22.000 million.

FY 2008 Output: Completed purchase of Advanced SGSI evaluation systems. Request for Proposal was issued to the two competing vendors soliciting SGSI systems. Proposals were evaluated, and purchase orders for both were prepared & signed, and awarded in Sep 2008.

FY 2009 Planned Output: System delivery is planned for Dec 2008 for one vendor & May 2009 for the other. Testing will begin during 2Q FY 2009. Planning for the laboratory and shipboard testing has been initiated. Install systems that pass lab tests aboard ship for qualification testing against Navy flight tests. Conduct operational shipboard flight testing. Develop test reports.

FY 2010 Planned Output: Final test reports issued. Secure approval for production; prepare close-out report; and execute contract options for AFDL for Service use. Program Management Agency (PMA) 251 has budgeted Other Procurement Navy (OPN) funding to develop logistics support documentation for the new system.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
AK-47 Special Effects Small Arms Marking System (SESAMS) Training System (Navy)	0.440			

Outcome: A successful FCT will provide the United States Marine Corps (USMC) with a SESAMS compatible AK-47 Training Weapon, developed by General Dynamics Ordinance and Tactical Systems of Canada, to improve the realism of urban warfare training. A two-year project under sponsorship of the FCT and Marine Corps Systems Command, Program Management Training Systems. Projected completion date of testing and technology transition will be FY 2009. The primary outputs and efficiencies to be demonstrated in the FCT are: (1) A permanent training weapon that allows the shooter to fire, at short range, a low velocity non-lethal 5.56mm SESAMS marking cartridge; (2) Accurate visual and auditory weapon signatures providing increased threat recognition, survivability and battlefield awareness; (3) Increased training safety by using a center firing mechanism, precluding the weapon from firing lethal, live ball ammunition; and (4) Avoidance of RDT&E and manufacturing costs of $0.950 million and $0.110 million, while providing a ROI of 5:1.

FY2008 Output: Received Foreign Test Data during 1Q FY 2008. Received FCT Funds during 2Q FY 2008. Initiated Proposal Contract Preparation during 2Q FY 2008

FY2009 Planned Output: Award contract, receive test articles, and initiate Lab test by end of 1st Qtr. Initiate Field User Evaluation by the end of 2Q FY 2009. Complete Lab/Technical testing, and FUE by end of 3Q FY 2009. Complete Tech Data Package & Test Report by end of 3Q FY 2009. Milestone C Decision and Close-out report expected by end of 4Q FY 2009.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Anti-Material Rifle - Sniper (SOCOM)	0.655			

Outcome: This project will evaluate anti-material rifles and subject them to a variety of tests to evaluate their performance, and ultimately select one rifle to complement the sniper rifle currently in SOF inventory. Primary Outputs and Efficiencies: Special Operation Forces (SOF) snipers need to be able to defeat material targets such as lightly armored vehicles, power stations, communication assets, unexploded ordnance, etc. Current sniper rifles are effective against personnel targets at long ranges, but are not as effective as desired against hardened/materiel targets. This rifle is designed to fill this capability gap. Research Development Test and Evaluation (RDT&E) cost avoidance for this weapon is $15.000 million and the collective operations and support and procurement cost savings are $9.000 million. This capability will be available to the warfighters two years sooner by using weapons already developed. Completion date is 30 Sept 2009.

FY 2008 Output: Conducted Performance Testing. Provided ammunition to domestic sources as government funded materials, according to contract. Performed "Shootability" Assessment.

FY 2009 Planned Output: Conduct initial Technical Testing; perform Operational and User Assessments and then down-select to most qualified vendor. Prepare test reports and submit decision packet. Milestone C decision is scheduled for 4Q FY 2009. Complete FCT Close-out Report.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Area Mine Clearing System (Army)	0.342			

Outcome: A successful project will provide the US Army Engineer Future Force with an Area Mine Clearance System (AMCS) capability. The AMCS is a manned mobile medium flail system that can neutralize anti-personnel (AP) and anti-tank (AT) mines with its rotating flail head over a large area. The vehicle can survive and protect the operator/crew from multiple AP and AT mine blasts. The system operates independently from all other systems or equipment, except for standard communications; therefore, there are no interoperability issues with current and future planned systems. Medium flails have been in use worldwide for over 20 years in humanitarian demining operations and provide a proven capability that is both reliable and re-producible. Today, Soldiers and Marines clear approximately 80 square meters per Combat Engineer Platoon per day of mines using hand held mine detectors, mine probes, grapnel hooks, and hand emplaced explosives. This method exposes Soldiers to unnecessary risks and is too slow to meet future force requirements. The AMCS program will provide the Army with a safer, more efficient and more systematic clearing capability. The Army medium flail program will increase the clearing capability to 2,500 square meters per platoon per day. The primary outputs and efficiencies to be demonstrated in future testing of the AMCS are: (1) extreme temperature operation; (2) electro-magnetic effects (EMI/EMC); (3) additional survivability testing; and (4) additional transportability testing focusing on rail, highway, and sea-lift. This Foreign Comparative Test will provide the Army with a cost savings of $6.700 million and provide a Return on Investment (ROI) of 3.3:1.

FY 2008 Output: Additional funds received during 4Q FY 2008 in the amount of $0.100 million. Services Contract was awarded in 4Q FY 2008, which allowed for repairs to one of the test articles. There will be no more testing with the repaired Test Article. Final FCT testing was in May 2008, and has allowed the AMCS FCT vendors to receive their official out-briefing in 1Q FY 2009.

FY 2009 Planned Output: FY 2008 funds will continue to provide support for the test article repair. In FY 2009, the AMCS actions will consist of: (1) Formal down-select to one system for the Army; (2) award of the production contract to the selected vendor for 65 systems total; (3) approval from Tank Automotive Command (TACOM) for a Conditional Material Release; and (4) initial system fielding and New Equipment Training to Engineer Clearance Companies. The project close-out report is anticipated in 1Q FY 2009.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
AT4-CS w/ Enhanced Blast Tandem Warhead (EBTW) (Army)	0.597			

Outcome: To demonstrate and qualify the Anti-Tank 4 Confined Space (AT4CS) to meet shoulder launched munition capabilities required by the US Army Infantry Center. The current AT4CS warhead provides high lethality and incendiary effects against armor (defeats 16 inches of armor) but lacks overmatching penetration and effect against masonry walls made of brick and concrete and other urban targets/structures, field fortifications (earth and timber bunkers). With increased deployment of US Forces around the world in urban warfare environments, a new multipurpose warhead with the ability to penetrate brick and concrete walls, incapacitate enemy forces behind urban structures and within field fortifications is required to maintain overwhelming firepower and reduce the logistics and training associated with multiple systems. The three-year effort will plan for and procure the hardware necessary to conduct test and evaluation for US Army, conduct the developmental and operational tests necessary to verify safety and support materiel release, and complete the modeling and simulation, and evaluation of test results to ensure that the AT4CS-EBTW meets requirements by the end of FY 2009. The lead service is Army. The primary outputs and efficiencies to be demonstrated are (1) capability of incapacitating enemy soldiers positioned behind urban walls and structures made of eight inch double reinforced concrete, (2) capability of incapacitating enemy soldiers positioned behind urban walls and structures made of 12 inch triple brick, (3) capability of incapacitating enemy soldiers positioned within earth and timber bunkers, (4) capability to meet performance requirements within close combat ranges and (5) capability to be safely fired from enclosures found in urban environments. In addition to savings in logistics and training from eliminating multiple munitions, the procurement cost savings of this project is estimated at 40-50 percent of the unit cost of each weapon by leveraging ammunition and fuzing components from other similar 84mm family weapons. Assuming $0.003 million per round savings x $0.020 million rounds over five years = $0.060 million.

FY 2008 Output: Conducted Instructor and Key Personnel Training in Sweden in preparation of Operational Testing. Accepted delivery of Target Practice rounds and conducted Operational Testing at Ft. Drum, NY in June. Initiated Developmental Testing (Blast Overpressure Testing at Aberdeen Proving Ground, MD) in August. Conducted two follow-up site visits in August and December to evaluate the contractor's technical approach and plan for delivering test assets for Developmental Testing to be completed during the 4Q FY 2009.

FY 2009 Planned Output: Accept delivery of final shipment of test assets and complete all developmental testing, conduct full system evaluation and prepare final close-out report. Spiral Output: The successful completion of safety tests will facilitate urgent materiel release in FY 2010. The qualification and fielding of the AT4CS-EBTW will be a combat multiplier since it reduces the need for continued fielding of multiple shoulder launched munitions with similar capabilities.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Autogated Image Intensifier Tubes (SOCOM)	0.540			

Outcome: This project proposes testing current foreign autogated Image Intensifier (I2) tubes, a crucial subsystem integrated into the night vision devices used by Special Operations Forces (SOF) in counter terrorism operations. Additionally, a separate evaluation will be conducted on the effectiveness of the Thales Display to meet Special Operations Command (SOCOM) night vision requirements. Primary Outputs and Efficiencies: US production of auto-gated Image Intensifier (I2) tubes for night vision devices (NVD) cannot keep up with the DOD demand for visual augmentation systems and has affected the fielding of night vision goggles (NVGs), specifically Army Navy/Passive Vision Sight 15A(AN/PVS-15A) to Special Operations Forces. The challenge is to qualify a foreign source of autogated I2 tubes that can be used to facilitate immediate fielding of AN/PVS-15A NVGs. Completion date is 30 June 2009.

FY 2008 Output: Project approved as an out of cycle 2008 project.

FY 2009 Planned Output: Funds received. Received test articles; conducted analysis, study, and integration; conducted technical and safety tests, performed user assessment with combined developmental and operational testing. Prepare decision packet and FCT Close-out Report. Milestone C Decision is scheduled for 3Q FY 2009.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Ceramic-Aluminum (CERAL) Engine Coatings (Air Force)	0.557			

Outcome: A chrome free drop-in replacement protective coating for gas turbine engines, landing gear, and surfaces of strategic components that are exposed to severe environments. The 76th Propulsion Maintenance Group (76th PMXG/CC) at Tinker Air Force Base plans to evaluate a non-metallic coating manufactured by Gebr. M.u.M. Morant GmbH of Grassau, Germany. The primary outputs and efficiencies to be evaluated are a non-metallic coating that lasts twice as long (3000 hours), costs 25 percent less, and increases engine performance by providing a smoother surface. Reduced corrosion, reduced cost, reduced friction and wear, equals increased performance, increased life, and saves fuel. Ceramic-Aluminum (CERAL) coatings are used extensively throughout DoD to provide protection from erosion and corrosion on gas turbine engines, landing gear, and surfaces of strategic components that are exposed to severe environments. Coating materials currently in use contain 6 percent carcinogenic chrome, whereas, CERAL 3450 is chrome free.

FY 2008 Output: Completed testing with final demonstration date end of 4Q FY 2008.

FY 2009 Planned Output: Completion date and final report 4Q FY 2009.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Ceramic Tile Testing and Evaluation for Hard Body Armors (Army)	0.846			

Outcome: A new hard armor, Small Armors Protective Inserts (XSAPI), using Silicon Carbide (SiC) made by Saint Gobain (Germany) or Hocheng (Taiwan), together with domestic SiC, to meet US Army's production needs. Silicon Carbide (SiC) candidate made by Hocheng (Taiwan) has been added and will be funded by the Project Manager for testing. Upon successful testing and evaluation, the product will be the deliverable: The primary outputs and efficiencies are new hard armor, XSAPI, with higher level of ballistic protection than current SAPI with minimum weight increase. RDT&E Cost Savings: $10.000 million. O&S Cost Savings: no impact. Procurement Cost Savings: $50.000 million. Fielding Reduction: no impact. Procurement Potential: $500.000 million. Other Benefits: Mitigate production risk, maintain industrial base.

FY 2008 Output: All contracts have been awarded. More than 100 samples from Saint Gobain/BAE have been tested. Based on testing results, British Aerospace Engineering (BAE)/Saint Gobain has submitted Product Demonstration Models (PDM) to Program Executive Officer (PEO) Soldier and passed the XSAPI specification requirements. A production XSAPI contract has been awarded to BAE with the design using Saint Gobain ceramic tiles. Schunk tile samples will be delivered for testing within next two weeks. Hocheng's test samples have been shipped to PEO Soldier for testing. Overall the program is on track and very successful.

FY 2009 Planned Output: Complete testing and evaluation of Saint Gobain, Schunk and Hocheng's ceramic tiles for XSAPI. Using testing data/results to assist the industry to improve their ceramic tile performance. Evaluation will include the ballistic performance against various threats, 5.56mm, 7.62mm, hard steel core and tungsten carbide core rounds, the cracking patterns, durability, environmental effect, and physical mechanical properties. Starting XSAPI procurement with passing performance results from foreign made ceramic tiles. Transition manager is Program Manger (PM) Soldier.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Enhanced 5.56mm and 7.62 Rounds for Special Operation Forces (SOF) Combat Assault Rifle (SCAR) (SOCOM)	1.068			

Outcome: This project qualifies enhanced 5.56mm and 7.62mm ammunition for Special Operation Forces (SOF) direct action missions. By employing a single "multi-purpose" round, the Special Forces operator has the precision fire, intermediate barrier penetration and terminal ballistic performance attributes of three or more separate rounds found in the current inventory of rounds. Primary Outputs and Efficiencies: True multi-purpose enhanced ammunition is being sought that combines improved terminal ballistics, including accuracy, penetration of steel and auto glass without deflection, as well as providing maximum tissue damaging effects. Combat effectiveness is enhanced, while ammo load/load-out is reduced. Completion date is scheduled for 30 Jun 2009.

FY 2008 Output: Published Technical Data Package for 5.56 and 7.62mm enhanced rounds. Awarded test article contracts and procured test articles. Sample testing conducted. Performed type classification testing.

FY2009 Planned Output: Down selection of vendors to participate in live fire testing; and completion of procurement contract for test items. Analysis of vendor data will be accomplished prior to the start of technical and safety testing leading to safety certification and Weapons System Explosives Safety Review Board qualification. A procurement decision packet will be completed before the end of 3Q FY 2009. An FCT closeout report will be published and distributed.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Fractal Antenna Technology for Shipboard Information Operations (Navy)	0.546			

Outcome: A successful FCT will provide the Navy a compact fractal element High Frequency (HF) antenna. This antenna will be based on that currently fielded onboard Spanish Navy frigate ships. This antenna will be much more compact and have a lower Radar Cross Section (RCS) than current United States Navy (USN) HF antennas. It will fit in locations not currently capable of supporting HF antennas and can be installed without an Antenna Tilting Group (ATG) in locations currently requiring ATGs. It will be the baseline for compact low-RCS HF antennas for future Navy ships. Two year project under Navy sponsorship of Space and Naval Warfare Systems Command (SPAWAR). The primary outputs and efficiencies to be demonstrated in the FCT are: (1) demonstration of a compact fractal HF antenna optimized for USN installations; (2) the potential elimination of ATGs from many HF antenna installations; (3) reduction in maintenance labor and expenses currently devoted to maintaining and repairing antenna tilting groups; (4) reduction in weight and improvement in balance/center of gravity due to removal of ATGs, as each ATG weighs roughly 1000#; (5) greater availability of antennas currently requiring ATGs; (6) opportunity to increase HF communications throughput through the installation of new and/or superior HF antennas onboard ships that are currently fully populated with antennas; (7) advancement in developing compact, low observable, low RCS HF signal intelligence antennas mandated for deployment onboard future ships, such as DD(X); and (8) Avoid RDT&E and O&S costs of over $63.500 million.

FY 2008 Output: Initial funding received 2Q FY 2008. Developed test specifications and a draft Fractal Test Plan. Completed test article contract negotiations 4Q FY 2008.

FY 2009 Planned Output: Test article contract award Jan 2009. FY 2008 funding will continue to complete test plan development, conduct bench level performance testing and shore antenna testing. Final test report and FCT close-out report scheduled for September 2009.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Global Positioning System (GPS) Jammer (Air Force)	0.550			

Outcome: To provide a state-of-the-art United Kingdom (UK) Low to Medium Power Defeat Agent GPS Jammer System, capable of emulating most current and projected adversary GPS jammers. Systems include remote control units, transport cases, batteries, and antennas. The Joint Navigation Warfare Center (JNWC) will evaluate a GPS Jammer system developed by Technology Ltd located in Twekesberry, UK. The GPS is a critical element of all US military operations. Our adversaries recognize the asymmetrical advantages GPS provides and are developing more and more robust GPS jamming systems to eliminate these advantages. This project involves identifying and procuring the most capable foreign jammer available in the market place to evaluate its ability to emulate adversary threats, current and projected, to provide realistic weapon system Positioning, Navigation, and Timing (PNT) denial testing, to support realistic operational training, and to support Tactics, Techniques, and Procedures (TTP) development to counter the growing threat.

FY 2008 Output: Procured test article and began evaluating the system.

FY 2009 Planned Output: Complete testing and publish test report 15 September 2009.

FY 2010 Planned Output: Procure additional Systems.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Heat Resistant Lightweight Matting (Navy)	0.575			

Outcome: A successful FCT will provide the Navy with lightweight, light-duty, heat-resistant airfield surfacing systems for use as a Vertical Takeoff and Landing (VTOL), taxi and parking surface for ground operations of MV-22 aircraft. This program will leverage all testing and data developed under the successful FY 2002 FCT that resulted in the testing and procurement of our current EAF Lightweight Matting. Current Lightweight Matting supports all USMC VTOL aircraft except unique operating profile of the MV-22 Osprey. Existing lightweight matting may not tolerate the MV-22 engine heat signature and loads. The primary outputs and efficiencies to be demonstrated in the FCT are: (1) this project will facilitate testing and deployment of a follow-on expedient airfield matting system capable of accommodating the MV-22, particularly in the austere operating environments found in Iraq and Afghanistan; (2) the MV-22 will provide the USMC with the enhanced range and warfighting capabilities. These capabilities can be further enhanced with the use of Lightweight Matting expeditionary airfields, thus giving additional flexibility to the MV-22 in order to bring more firepower to bear on hostile forces; and (3) avoid RDT&E cost of $1.800 million.

FY 2008 Output: Lightweight Matting (LWM) was instrumented and Lab tested to determine material properties. Engineering analysis was conducted to further determine material limits of LWM to ensure safety of flight for MV22 aircraft testing. MV22 aircraft was tasked to dwell on LWM for various time periods. MV22 conducted numerous VTOL evolutions to characterize engine exhaust heat signatures. MV22 testing was conducted at MCAS Bogue. Final test report will provide recommendations for use of LWM for MV22 use in training and wartime.

FY 2009 Planned Output: Finalize testing, review test reports; complete FCT close-out report and begin procuring if test results are favorable.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Hostile Forces Tagging, Tracking and Locating (SOCOM)	0.648			

Outcome: This project will evaluate a collection of tagging, tracking and locating devices that represent the latest in technology. Primary Outputs and Efficiencies: These electronic components consist of Data Loggers, Direction Finding devices with associated receivers, Ground Positioning Satellite (GPS) based cellular and satellite systems. These devices will provide deployed Special Operations Forces worldwide with an enhanced capability to tag, track and pin-point location of adversaries. Due to the number of test articles involved and their sophistication, testing was divided into two phases over two years. The procurement potential for these devices is up to $24.300 million and will result in $19.500 million cost avoidance. Completion date is 30 June 2009.

FY 2008 Output: Contracted for and received test articles for Phase II. Conducted analysis of vendor data. Conducted Initial Technical Test for Phase II and Prepared Technical Test Report. Began Operational Test for Phase II.

FY 2009 Planned Output: Complete Operational Test of Phase II test articles, prepare and submit test reports. Prepare decision packets and FCT Close-out Report. Procurement decision is scheduled for 3Q FY 2009.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Joint Program Executive Office (JPEO) Biological Detection System (Army)	1.253			

Outcome: This project will evaluate Biological Detectors for performance and cost advantages over the Biological Aerosol Warning Sensor (BAWS) which is a component in the Joint Biological Point Detection System (JBPDS) and Joint Portal Shield (JPS). The JBPDS has fielded 230 systems and JPS has fielded 222 systems. Together, they are deployed in locations where Biological Agent surveillance is required. Maintaining Biological Agent surveillance operations has become an affordability issue, and systems that are less manpower-intensive are required. The primary outputs and efficiencies to be demonstrated are (1) Reduction of Operation and Support costs (goal 67 percent) through lower false detection rate representing $0.840 million in cost avoidance per day per site and (2) Increase in reliability to lower dependence on the need for cleaning and repair by contractor and Original Equipment Manufacturer (OEM) repair which averaged $0.011 million per detector in 2005. Based on 500 fielded systems by FY 2009 this project will reduce costs by $1.500 million annually if the evaluation substantiates the manufacturer's claims.

FY 2008 Output: Initial FY 2008 funds were received in Aug 2008. The candidate foreign detectors were procured and tested along with domestic detectors against biological simulants and interferents at Eglin Air Force Base (Florida), Dugway Proving Ground (Utah), and various CONUS locations. Upon completion FY 2007 tests, no candidate detector performed better than the baseline system. Vendors were allowed to revise their algorithm based on data from FY 2007 tests. Testing resumed in FY 2008 with the addition of biological agent chamber testing. No foreign test candidate performed well against the JBPDS approved pass/fail criteria.

FY 2009 Planned Output: the Detector evaluation in agent chamber will be completed in 1Q FY 20O9 using combined remaining FY 2008 FCT funds and internal program funds. Closeout report submitted. No further FY 2009 actions are planned for FCT.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Large Polymer Lithium ion Battery (Army)	1.019			

Outcome: This project will evaluate the potential for Lithium-Ion (Li-Ion) polymer and 18650 cell battery cells, to satisfy Army and United States Marine Corps (USMC) portable electrical power requirements for a high power density, high cell potential fuel source. The candidates may provide greater energy density than present Li-Ion cell-based batteries and have the potential to reduce the logistics burden and enhance cost effectiveness through increased mission times (increases in power), greater shelf life, increases in power and greater recharging capability. Efficiency: Estimated in a $20.000 million RDT&E cost avoidance and a $5.000 million O&S cost savings. The primary outputs and efficiencies to be demonstrated in the development tests are 1)demonstrate 3 times energy of BB-2590; 2) demonstrate at least 250 cycles to reduce the cost of use; 3) operate at all environmental conditions; 4) avoid RDT&E costs of $20.000 million.

FY 2008 Output: Purchased Li-ion polymer cells for BB-XX80 type batteries. Based on initial test and evaluation, they are acceptable to be used in BB-XX80 type batteries. Awarded design concept of the batteries. Completed engineering evaluation of cells and obtain initial batteries for XX80 type design batteries. Initiated evaluations on battery configurations. Completed preparation for purchase of cell types to evaluate the cell performance and safety performance of the cells for BB-XX80.

FY 2009 Planned Output: Completed evaluations of batteries using Li-Ion polymer cells using BB-XX80 type batteries. Awarded the batteries contracts for to build the BB-XX80 batteries. The BB-XX80 batteries are designed very similar to the BB-XX90 battery which will allow all 75+ applications to use this battery. The 50 batteries were delivered to Communications-Electronics Research Development and Engineering Center (CERDEC) for evaluation in July 2008. Additional 20 batteries each using 18650 cells are awarded to lower the cost of battery pack. Completed written evaluations reports on polymer battery packs for Communications Electronics Command (CECOM - US Army) Battery group to purchase, if successful, this battery type with 18650 cells.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Mems Accelerometer for Tactical Engagement Sensor System (Army)	0.167			

Outcome: This project will test a foreign Micro Electro-Mechanical System (MEMS)that will provide the U.S. Army improved training realism during live simulated force-on-force tactical engagement training exercises by reducing power consumption, weight, volume, and procurement cost. The current system uses an accelerometer component that is costly, consumes too much power, and is too large which are significant barriers to transition it to PEO STRI's One Tactical Engagement Simulation System (OneTESS) program of record. If this project is successful, it is our intent to modify existing designs and incorporate the new (MEMS) accelerometer for transition in FY 2010. The primary outputs and efficiencies to be demonstrated in the FCT are: (1) reduce power consumption by 90 percent; (2) reduce weight by 90 percent; (3) reduce volume by 25 percent; (4) reduce procurement cost by 50 percent; (6) avoid Research Development Test and Evaluation (RDT&E) costs of $0.660 million; and provide Return on Investment (ROI) of 480:1.

FY 2008 Output: Award laboratory test and evaluation contract in 2Q FY 2008 procure test articles, and initiate accelerometer testing.

FY 2009 Planned Output: Finalize testing and complete test data analysis and report by 1Q FY 2009.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
MK47 Trainer System (SOCOM)	0.838			

Outcome: This project will evaluate a crew served weapons training system used for mission specific rehearsals prior to combat operations. Primary Outputs and Efficiencies: The trainer system allows operators to dry fire the weapon and receive feedback. The significant procurement cost avoidance of approximately $57.000 million is realized by firing training ammunition instead of expensive programmable airburst ammunition. The objective is to directly improve the readiness of Special Operation Forces (SOF) forces by allowing operators to train on MK47 systems and rehearse missions on a highly realistic trainer. Completion date is 30 Sept 2009.

FY 2008 Output: Received test articles. Conducted analysis, studies, and integration. Worked through contracting office to submit Engineering Change Requests and contracted for intermediate and advanced systems with adjusted delivery dates. Analyzed vendor data. Conducted technical and operational tests with limited User Assessments.

FY 2009 Planned Output: Prepared and submitted technical test report. Prepare and submit test results of the operational test. Prepare decision packet and FCT Close-out Report. Milestone C Decision is scheduled for 2Q FY 2009.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Real Time Geospatial Information Sharing (Army)	0.469			

Outcome: This project will test Black Coral Live to provide Command Post of the Future (CPOF) Command and Control Systems real time information sharing and collaboration using geospatial maps/data for the war-fighter at all levels. The test will validate searching of current data (from internet or official databases) and ability for several information layers to be combined for see-through ability. Each user has the ability to add their detailed knowledge from the field and/or send a message to another user. Improvements: Incorporation of the Black Coral Live software into the CPOF architecture will provide CPOF with an on the move solution to support mounted Battle Command. Efficiency: The outcome will provide Geospatial Information System collaboration to support Battle Command on the move operations, at a RDT&E.

FY 2008 Output: Development of a software module that allows Black Coral Live to interoperate with CPOF via a plugin to the CPOF Databridge. Interoperability between Black Coral Live and CPOF over the tactical network was demonstrated at the 2008 Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) Exercise at Fort Dix, and Black Coral Live was able to successfully exchange geospatial and tactical data with CPOF. Compliance with MIL-STD-2525B symbology was greatly improved, but not completed. All of the single point symbols are supported, as well as most of the multi-point graphics. Overall, development of interoperability requirements was completed and successfully tested and demonstrated.

FY 2009 Planned Output: Completion of support for Commercial Joint Mapping Tool Kit (CJMTK) and MIL-STD-2525B Change 1. Continued discussion with the CPOF program office to determine how they could employ the use of Black Coral Live, with the successes demonstrated at the Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) Exercise. Final testing of full CJMTK and MIL-STD-2525B Change 1 support will be completed, which will ensure full interoperability with CPOF.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Secure High Capacity Tactical Radio Relay System (Army)	0.359			

Outcome: This project will test and evaluate an improved, more efficient communication solution for securely moving information between central base stations and multiple outstation network nodes via the Swedish Point-to-Multipoint (PTMP) radio system versus the currently fielded military Point-to-Point (PTP) radios. The Swedish PTMP solution could reduce the number of required radio-sets by up to 50 percent and offer alternate modes of operation, providing enhanced communications security. The Swedish system is also easy to set up, operate and maintain, and designed for simple and efficient network management by means of a built-in web server. The primary outputs and efficiencies to be demonstrated are: (1) up to 50 percent reduction in number of radios required in a "star configuration" network system , (2) communications performance equal or greater than the Army current High Capacity Line of Sight (HCLOS) AN/GRC-245 radios (data rates, short delays, comm. range, etc.), and (3) possible enhanced security performance due to additional Low Probability of Intercept (LPI)/Low Probability of detection (LPD)/ Anti-Jam (AJ) modes. Procurement savings: $9.100 million. Research Development Test and Evaluation (RDT&E) Cost Avoidance: $20.000-30.000 million & 18-24 months of development to upgrade current Army radios. Operations & Supports Life-Cycle Cost Savings: Over $5.000 million, based on 50 percent reduction in supported radios.

FY 2008 Output: Radios (test items) received at US Army Communications-Electronics Research Development and Engineering Center (CERDEC). Technical tests performed in the laboratory and in the field. Test & evaluation report preparation. Reviewed test results with sponsoring Government Program of Record: Program Manager Tactical Radio Communications Systems (PM TRCS). PM TRCS analysis of alternatives & procurement decision. Close-out report & briefing

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Spatial Disorientation Trainer (Air Force)	0.284			

Outcome: A Spatial Disorientation (SD) Trainer. The Chief, Aero Medical Flying Training Branch/Command Pilot Physician (AETC/A3FP) at Randolph AFB will evaluate a Spatial Disorientation Trainer developed by Technik GmbH of Ranshofen, Austria. The primary outputs and efficiencies to be evaluated are pilots experiencing SD illusions and practicing SD recoveries in a realistic simulated flight environment. The cost of unrecognized Spatial Disorientation (SD) accidents in the USAF between 1991-2004 was tremendous, representing 37 percent of fatal Class A mishaps at a cost of over $1.9 Billion and 82 lives. Air Education and Training Command (AETC) plans to reduce this accident rate by obtaining SD trainers capable of producing most of the known SD illusions associated with aircraft flight and incorporating them into pilot training, allowing pilots to experience SD illusions and practice SD recoveries in a realistic simulated flight environment (a training capability that currently does not exist in the USAF). This program will allow AETC to evaluate and compare currently available Commercial Off The Shelf (COTS) SD trainers capable of allowing a pilot to fly the simulator while being exposed to motion-induced, visual and seat-of-the-pants mismatches.

FY 2008 Output: Completed testing with final demonstration date end of 4Q FY 2008.

FY 2009 Planned Output: Completion date and final report 2Q FY 2009.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Tactical Paging Buoy (TPB) for Sub Comms at Speed and Depth (Navy)	0.283			

Outcome: A near-term Communications at Speed and Depth (CSD) capability was identified as one of the highest Fleet priorities as critical to planned missions and scenarios. This project will evaluate submarine-launched expendable communications buoys developed by Ultra Electronics Maritime Systems of Canada and RRK Technologies of the United Kingdom to provide a submarine at depth and speed with the capability to receive messages from the global Iridium Satellite Network via undersea acoustic communications. The primary outputs and efficiencies to be demonstrated in the FCT are: (1) A new capability that will support more agile submarine mission execution and better synchronized joint/coalition operations, and enable rapid and inexpensive fielding of the acoustic communications capability aboard U.S. submarines.

FY 2008 Output: All contract test items and supporting communications network interface units were delivered. A pre-Military Utility Assessment (MUA) submarine test was conducted at Atlantic Undersea Test and Evaluation Center (AUTEC) with the fleet shore command facility, Norfolk, VA, 3Q FY 2008. During the 4Q FY 2008, a full MUA evaluated the TPB in several operational scenarios with an operational submarine in the AUTEC vicinity against the 19 Key Performance Parameter equivalents (derived from the Technical Requirements Document for TPB). Commander, Operational Test and Evaluation Force (COMOPTEVFOR) performed the final evaluation.

FY 2009 Planned Output: The Final Technical Test Report will be completed 1Q FY 2009 and project closeout reports are anticipated 2Q FY 2009.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
TerraSARX (Air Force)	1.478			

Outcome: A high resolution, day/night, all weather observation capability. The Eagle Vision Program Manager at Hanscom AFB will evaluate the software that will interface with Eagle Vision a new high resolution, day/night, all weather observation capability developed by the German company Infoterra. The primary outputs and efficiencies to be evaluated will be the capability to extend the all weather imagery capabilities of the operational Eagle Vision systems with resolution reaching 1 meter Ground Sample Distance (GSD) providing the highest resolution ever achieved from an unclassified civil or commercial satellite. This capability is critical to effective mission planning and battle space awareness and with a new unclassified satellite, allowing open sharing among coalition partners. Germany, with other European partners, has launched this new generation synthetic aperture radar satellite to provide all weather satellite imaging and ocean surveillance.

FY 2008 Output: Contract awarded 1Q FY 2008. System testing and data analysis will take place during the year.

FY 2009 Planned Output: Complete testing and final report 4Q FY 2009.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Type II Superlattice Focal Plane Arrays and Cameras (Army)	1.268			

Outcome: This project to demonstrate infrared focal plane array performance at higher operating temperatures than is currently available from state-of-the-art focal plane arrays. The eighteen month project is under the sponsorship of Program Management (PM) Night Vision for completion of demonstration/testing by 2Q FY 2009 with subsequent transition to PM Night Vision (NV)/ Recon, Surveillance and Target Acquisition (RSTA). These focal plane arrays will be appropriate to retrofit existing systems with potential transition to Long Range Scout Surveillance System (Stryker and HMMWV), Apache (targeting), F-35 (threat warning, navigation and targeting) and Future Combat Systems. The lead service is Army. The primary outputs and efficiencies will allow us to assess our ability to carry out the activity and measure how well we have achieved the outcomes shown below. Some of the key points are; (1) decrease the costs of the focal plane array by a factor a two (2) raise operating temperature over current arrays, thereby decreasing system cost (smaller size, weight, power) (3) the increase operating life by a factor of two. The formula will be used for calculating the return on investment (ROI) for the above efficiencies is (cost avoidance as result of successful FCT completion)/FCT investment. The calculation yields an ROI of 92.1. The cost avoidance is based upon $30.000 million in research and development costs avoidance, reducing the acquisition cost of each focal plane array by 50 percent avoiding $60.400 million and increasing the reliability by a factor of two with a total ownership cost avoidance of $181.000 Million. The above calculation does not take into account the time value of money.

FY 2008 Output: Delayed delivery of camera to 2Q FY 2009, pending delivery of same cameras to their German commercial airline customer. The German Government did not allow purchase of Long Wavelength Infrared (LWIR), Strained Layer Superlattices (SLS) camera from AIM (Germany) and subsequently the FCT plan was modified at no additional cost to allow purchase of dual mode active/passive camera from Selex (United Kingdom).

FY 2009 Planned Output: Parts to be acquired and tested in the Night Vision and Electronic Sensors Directorate (NVESD) IR System Test Lab tactical requirements and at the IR Space Radiation Effects Laboratory for strategic requirements. Following this, then transition to Long Range Advanced Scout (LRAS) for ground testing.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Waterjet Shock Qualification for Future Naval Combatants (Navy)	2.068			

Outcome: A successful FCT will provide the U.S. Navy large waterjet shock-qualified certifications. Two major suppliers, Kamewa/Rolls Royce (Sweden) and Lipps/Wartsilla (Netherlands), will be subjected to full-scale shock test and modified, if necessary, in order to be Grade A shock qualified per U.S. Navy requirements. The primary outputs and efficiencies to be demonstrated in the FCT are: (1) large waterjet Grade A shock certification for installation on the Navy's Littoral Combat Ship (LCS), and other future naval ships; and (2) RDT&E cost savings of $50.000 million, production cost savings of $25.000 million, and procurement cost savings of $8.000 million.

FY 2008 Output: Awarded contract for Vendor support tasking, to assist in test fixture design, waterjet test preparation, operational evaluation of the waterjet pre/post shock, tear-down inspection and miscellaneous support. Exercised purchase order for spare Wartsila-Lipps waterjet for shock testing.

FY 2009 Planned Output: Shock test is scheduled for 2Q FY 2009. Complete detailed test fixture design, including design of waterjet prime mover and test procedure development. Finalize test configuration with approval from Naval Technical Authority on waterjet operation and mounting. Delivery of waterjet components and integration into test apparatus.

FY 2010 Planned Output: Accept delivery of Wartsila-Lipps waterjet and deliver to components and integration into test apparatus. Prepare for Wartlisa-Lipps for final test configuration with approval from Naval Technical Authority on waterjet operation and mounting. Develop final test report and close out report.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
40MM Extended Range Marking (Army)	1.116			

Outcome: The objective of this program is to test and qualify, and field a new Non-Lethal Extended Range 40 mm Marking Munition for use in both the M203 and XM320 Grenade Launcher system. Commercial items will be procured for formal test and evaluation against US Army requirements. Upon successful testing, the XM1140 40mm Extended Range Marking Munition will be type classified into the Army inventory. The XM1140 40mm Extended Range Marking Munition is intended to replace the M1006 Cartridge for select applications and will increase the range of the current M1006 cartridge from 50 meters to 75 meters as well as provide an identifiable mark on personnel targets. Currently, soldiers must move closer to the disruptive elements subject to the application of the non-lethal force which places both soldiers and subjects at increase danger of unintended effects. The extended range will provide a longer buffer zone which increases the time before any decision to switch to lethal force is made while still applying an identifiable mark to the subject(s). Primary outputs and efficiencies are: Research Development Test and Evaluation (RDT&E) Cost Avoidance $2.4 million; Procurement Cost Avoidance $0.750 million; Fielding Reduction 1+ years; Procurement Potential $2.400 million. It is estimated that the XM1140 will save $2.400 million in Research and Development funds as well as enhance the capability of soldiers to apply a non-lethal deterrence at extended ranges an estimated one plus years earlier than if developed in-house.

FY 2008 Output: Program documentation has been generated to establish acquisition strategy and program baseline. The Capability Production Document has been drafted and is in process of being staffed for Joint Requirement Oversight Council approval. Prepared documents for the release of the solicitation to industry. Downselect and award contract for qualification test items.

FY 2009 Planned Output: Perform Qualification Test and downselect and award production options.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
40 MM L60 HEI (SOCOM)	0.900	1.537	1.012	

Outcome: This project will qualify multiple sources of 40mm L60 High Explosive Incendiary (HEI) ammunition. Air Force Special Operations Command's (AFSOC) premier combat support aircraft, the AC-130 Gunship, had planned to replace the Bofors 40mm gun with a 30mm Bushmaster. Due to fire control integration issues, AFSOC is no longer pursuing that as an option. Planned attrition of the 40mm ammunition in time for the 30mm replacement is now a critical and indefinite requirement. Primary Outputs and Efficiencies: After January 2011 no 40mm ammunition will be available for AFSOC missions at the current rate of usage. Total RDT&E cost avoidance exceeds $20.500 million. Completion date is 31 Dec 2010.

FY2008 Output: Received approval for out of cycle new start project. Conducted industry tours and posted solicitation in FedBizOpps.

FY 2009 Planned Output: Funding received. Contract for test articles; begin Technical and Safety testing.

FY 2010 Planned Output: Continue Technical Testing. Conduct Operational and User Assessment. Obtain Air Worthiness certification. Obtain Joint Munitions Safety Review certification.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Advanced Airborne Expendable Infrared Countermeasures (IRCM) (Navy)	0.523	2.616		

Outcome: This project will demonstrate an increase in the ability of Navy and Marine Corp aircraft to defeat advanced infrared man-portable air defense systems (MANPADS) with IMI pyrotechnic decoys. The primary outputs and efficiencies to be demonstrated in the FCT are: (1) the FCT flare must demonstrate at least a 10 percent increase in effectiveness against the classified listing of Tier 3 missiles from the Advanced Strategic Tactical Expendables (ASTE) program or an optimized dispense pattern which uses fewer decoy flares in combination; (2) the flare must demonstrate 95 percent reliability at a 90 percent confidence level when used in combination with the BBU-35 impulse cartridge; (3) additional benefit will likely be a reduction in the types of expendable countermeasures maintained in the inventory; and (4) avoid RDT&E costs of $9.25 million. This is a Navy-led project for the KC-130J aircraft; however, the Air National Guard has also committed to participate in evaluation testing using the F-16 and A-10 aircraft.

FY 2008 Output: Bullet Impact and Lockset testing was conducted on the M216 in May 2008 to determine the safety of the item for carriage onboard U.S. military aircraft. The Lockset testing demonstrated a Type V reaction, resulting in burning of the item without propagation to surrounding flares. The Bullet Impact tests resulted in a Type IV reaction in which the impacted flare propagated to adjoining items and caused minor damage to the dispenser magazine. Carriage of these flares on military aircraft should not pose serious safety concerns. A procurement contract was awarded to IMI, Inc in July for delivery of decoy flares for initial safety and qualification testing, with an option for the additional units necessary for conduct of Hazard Classification, Insensitive Munitions evaluation and effectiveness flight testing in FY 2009. The initial quantity of 700 M216 and 380 MJU-70/B units were received in Oct 2009. Digital simulations using the M216 on the KC-130J resulted in an optimized pattern which should provide very good effectiveness against 3rd generation infrared Man Portable Air Defense System (MANPADS) during flight test evaluation of the items.

FY 2009 Planned Output: Safety and qualification testing of the M216 is scheduled for the 1Q FY 2009 and will continue through the 2Q FY 2009. With successful results, the option on the contract will be exercised to procure the additional 2100 items needed for Insensitive Munitions, Hazard Classification, Safe Separation and Effectiveness Flight testing. Safe Separation testing from the KC-130J test aircraft will be performed during the 3-4Q FY 2009 in preparation for the Effectiveness Flight test, scheduled to begin in late September. Initial Hazard Classification testing will also begin during the 4th Qtr 09 in preparation for a brief to the Weapons Systems Explosive Safety Review Board during FY 2010.

FY 2010 Planned Output: The Effectiveness Flight test will be performed during October 2009 after determination of the safety of dispensing the items from the aircraft through the Safe Separation tests. Insensitive Munitions and Hazard Classification testing will also be completed, and the test results briefed to the Weapons Systems Explosive Safety Review Board (WSESRB) to verify safety of transport on Navy vessels. A final report of all testing on the M216 will be written and briefed to the Navy acquisition authority to get a Milestone C decision by the end of 2Q FY 2010. Initial procurement will begin in the 3Q FY 2010 with deliveries in FY 2011.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Advanced Coatings Application Module (Air Force)	0.815	1.172		

Outcome: To provide a state-of-the-art Thermal Spray Coating System. Component life extension and reduced cost of operation can be achieved via the acquisition and qualification of the Canadian manufactured Axial III Advanced Thermal Spray Coating System. Wear coatings and thermal barrier coatings, essential parts of many turbojet engine and airframe components, are currently being applied using a technology dating back to 1914. The Axial III Advanced Thermal Spray Coating System produces coatings that exhibit superior performance at a fraction of the current price by leveraging recent advancements in spray coating techniques. The Axial III system applies traditional coatings in one-half the time and at one-half the cost of the current systems. In addition to its ability to apply wear resistant coatings, the Axiall III system can apply thermal barrier coatings and modern nano-based coatings at the same ratio of cost savings.

FY 2008 Output: Contracted for the test Article.

FY 2009 Planned Output: Complete testing and publish test report 15 September 2009.

FY 2010 Planned Output: Procure additional Systems.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Aircraft Arresting System for F-22 and JSF (Air Force)	0.706	1.527		

Outcome: To provide a previously unavailable functionality and enhanced capability by safely and controllably decelerating the full array of USAF fighter aircraft without imparting excessive hook-loading and dangerous end-of-arrestment aircraft rollback. This evaluation will provide a complete dual-disc BC11 braking system, including all associated hardware, software, and required spare consumables shall be provided. All necessary installation, operational, and maintenance instructions will be included. HQ ACC/A7OI, Langley AFB, Virginia will evaluate the BC11 computer-controlled caliper-disk aircraft arresting system from Scama of Vderstad, Sweden. As new aircraft, such a the F-22 and Joint Strike Fighter (JSF), are introduced into the Air Force's inventory, the 40 year old BAK-12 aircraft arresting system has become overburdened; it cannot be adjusted to safely stop an F-22 throughout the F-22's full operational range of stopping speeds without overstressing the tail hook and aircraft structure of the lighter-weight F-16. The BC-11 will provide previously unavailable functionality and enhanced capability by safely and controllably decelerating the full array of USAF fighter aircraft without imparting excessive hook-loading and dangerous end-of-arrestment aircraft rollback. Since the BC11's computer controls include extensive self-diagnostics and would provide availability feedback to the airfield tower, as well as automated recordkeeping, the system would require significantly less maintenance and support, which in turn would result in overall lower life-cycle costs.

FY 2008 Output: Test article contracted for with delivery scheduled for March 2009.

FY 2009 Planned Output: Complete testing and publish test report 15 September 2009.

FY 2010 Planned Output: Procure additional Systems.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Family of Hawkmoor Limited Burners (Army)	0.826	0.762		

Outcome: To eliminate the need for a High Mobility Multi-purpose Wheeled Vehicle (HMMWV) or a 2kW generator when operating Company-sized, mobile Army field feeding systems and components. To enhance the ability of field feeding equipment to be utilized in forward and remote locations. To reduce the fuel consumption rate of field kitchens and the overall logistics tail of Army field feeding. To improve the overall reliability, availability, and maintainability (RAM) characteristics of mobile field feeding systems. The primary outputs and efficiencies will be demonstrated as follows: (1) high RAM characteristics for integrated system of Hawkmoor burner and Self-powered Tray Ration Heater (STRH) (2) 40-Watt or less power requirement by burner (3) no reduction in ration heating time for integrated burner and heater tank system. RDT&E Cost Savings: $1.500 million. Procurement Cost Savings: $0.318 million. O&S Cost Savings: $33.900 million. Other Benefits: Capability to integrate burner/STRH combination into field feeding systems used by multiple services.

FY 2008 Output: Developed project strategy plan for tests and acquisition. Awarded contract to obtain five Hawkmoor burners for use in testing program. Purchased two Self-powered Tray Ration Heaters (STRH) with contracts that were awarded as part of the STRH program. Each STRH was integrated with a Hawkmoor burner. Developed test plans and conducted burner testing at Natick. Testing performed included fuel consumption rate, energy output, efficiency, power requirements, and a preliminary evaluation of burner reliability and maintainability. Prepared detailed test plan and began conduct of limited technical testing of burner integrated into STRH at Aberdeen Test Center, MD.

FY 2009 Planned Output: Continue limited technical testing of burner integrated into STRH at Aberdeen Test Center, MD.

FY 2010 Planned Output: Completion of technical testing at Aberdeen Test Center, MD. Development of detailed test plan and conduct of a User Evaluation of the Self-powered Tray Ration Heater integrated with Hawkmoor burner. Army Test and Evaluation Command will prepare a test report and system evaluation report for burner integrated into Self-powered Tray Ration Heater. Completion of a system performance specification. Transition of the project to procurement. Transition manager is PM Force Sustainment Systems.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Fire Control System for Special Operation Forces (SOF) Combat Assault Rifle (SCAR) Grenade Launcher (SOCOM)	1.145	1.057		

Outcome: This project will extend the effective range of the Enhanced Grenade Launcher Module, which is affixed to the Special Operations Forces Combat Assault Rifle (SCAR), from 200 to 600 meters. Primary Outputs and Efficiencies: This project integrates the fire control and ammunition programming technology that is necessary to fire a medium velocity 40mm programmable round from the SCAR, in an effort to counter the current Rocket Propelled Grenade (RPG) threat. RDT&E cost avoidance is estimated at $250.000 million. An estimated savings in combat operations of $15.000 million per year are realized. Fielding reduction is greater than 3 years. Completion date is 30 Sept 2009.

FY 2008 Output: Project approval and Integrated Product Team formation. Initial FCT funds received. Contract preparation and award for Phase I. Continue project and test planning. Fabrication and integration of test articles.

FY 2009 Planned Output: Technical/Safety Testing (Phase 1). Initial System Demonstration and Limited User Assessment. Delivery of Test Articles. Technical and Safety Testing (Phase 2); Second User Assessment. Prepare Capability Production Document and Milestone C Decision.

FY2010 Planned Output: Complete FCT Closeout Report 1Q FY 2010.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Hand-Held Laser Welder (HHLW) (Air Force)	0.696	1.007		

Outcome. To provide A fully qualified Technical Readiness Level Nine (TRL 9) self-contained, field-deployable, gas-shielded, hand-guided laser-welding device for the in-theater repair of strategic military components, specifically those constructed of exotic titanium and other strategic alloys. The 76PMXG/QI at Tinker AFB, Oklahoma will evaluate a Hand-Held Laser (HHLW) developed by Laser Zentrum Hannover e.V (LZH) / S.E.T., LLC located in Hannover, Germany. Currently this capability is only available at the Depot level. Critical components, such as the B-2 aft deck, which, up to this point, could only be repaired at depot level, can be in-theater repaired. The HHLW unit is self-contained, field-deployable, and can withstand extended exposure to the elements. Welding of thin parts also becomes possible with less potential for warping or burn-through. This extends HHLW benefits to new repair applications that are impractical with automated systems and, due to its compact size, can reach otherwise inaccessible locations. With this evaluation the benefits of Laser Welding out of the depot and onto the battlefield where it can reduce the cost and time to repair and will provide increased asset utilization to the warfighter.

FY 2008 Output: Procured the test Article and commenced evaluating the system.

FY 2009 Planned Output: Complete testing and certification and publish final test report August 2009.

FY 2010 Planned Output: Procurement.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
M1A1 120MM Multi-Purpose High Explosive (MPHE) Munition (Navy)	1.413	1.762		

Outcome: A successful FCT will provide the United States Marine Corps (USMC) with 120MM Multi-Purpose High Explosive Tank Ammunition for the M1A1, being competed by Rheinmetall Waffe Munition/L-3 of Germany and General Dynamics-Ordinance and Tactical Systems of Norway. A two-year project under sponsorship of the FCT and Marine Corps Systems Command (MARCORSYSCOM), Program Manger (PM) Tank Systems. Rounds will be transitioned to deployed USMC forces at the end of CY 2008. Projected completion of all testing and qualification will be FY 2009. The primary outputs and efficiencies to be demonstrated in the FCT are: (1) A tank round capable of reducing structures and assisting dynamic entry for infantry, while retaining its ability to destroy vehicles; (2) consolidate four different tank rounds into one round encompassing point detonation, delay, and airburst capabilities; (3) increase ammunition effective range by 833 percent, provide improved blast fragmentation, and reduce the logistical burden while maximizing the M1A1s ammunition load; and (4) avoid potential added RDT&E costs of $169 million, while providing a ROI of 82:1.

FY 2008 Output: Completed Test Planning and Received Foreign Test Data at the beginning of 1Q FY 2008. Received FCT funding at the end of 2Q FY 2008. Received 120mm MPHE Test Cartridge for continuity test 4Q FY 2008.

FY 2009 Planned Output: Complete Source Selection Down-Select by end of 1Q FY 2009. Receive initial test articles and begin Point Detonation Qualification Testing during 1Q FY 2009. Complete PD Qualification Testing, and Limited User Evaluation by end of 2Q FY 2009. Complete WSERB Certification by mid 3rd Qtr. Complete Procurement Decision by end of 3Q FY 2009.

FY 2010 Planned Output: Complete User Evaluation by end of 2Q FY 2010. Provide a Full Production Decision, Technical Test Report, and Close-out Report by the end of 3Q FY 2010.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Programmable High Explosive Dual Purpose Ammunition (SOCOM)	1.075	1.570		

Outcome: This project will produce a 40mm high-velocity Programmable-High Explosive Dual Purpose (P-HEDP) round for the Advance Lightweight Grenade Launcher (ALGL) MK47 Weapon System. Primary Outputs and Efficiencies: P-HEDP ammunition will consist of components derived from two other successful FCT projects combined into the next priority round from the ALGL operational requirement. These components will be assembled, tested, qualified, and then released for SOF use. RDT&E cost avoidance for this type of effort is $9 million. Combined operations and support and procurement cost avoidance is expected to be $27.000 million. Completion date is 10 September 2009.

FY 2008 Output: Project approval and Integrated Product Team formation. Initial FCT funds received. Test article contract awarded.

FY2009 Planned Output: Delivery of test articles June 2009. Technical testing at manufacturing facility in Norway and Naval Surface Warfare Center (NSWC) Crane Indiana, Joint Safety Review Board approval, operational testing and Milestone C Decision.

FY2010 Planned Output: Complete FCT Closeout report 1Q FY 2010.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Signaling Colored Smoke Grenades (SCSG) (Navy)	0.713	1.046		

Outcome: A successful FCT will provide the United States Marine Corps (USMC) with a family of Signaling Colored Smoke Grenades for procurement and immediate fielding to the Warfigher. A two year project under sponsorship of the FCT and MARCORSYSCOM, PM Ammunition. Projected testing completion date will be FY 2009. The primary outputs and efficiencies to be demonstrated in the FCT are: (1) Readily producible and cost efficient Green/Yellow/Red/Violet/White colored smoke grenades to meet operational requirements for ground-to-air and ground-to-ground signaling; (2) Improvements for increased smoke duration, safer initiation system by reducing flame height, decreased smoke toxicity, more environmentally friendly components, reduced weight, Insensitive Munitions compliance, and denser smoke to enhance visual recognition from long distances; (3) Increased availability for training purposes; and (4) Avoid RDT&E and Procurement costs of $0.853 million and $3.300 million while providing a Return on Investment (ROI) of 10:1.

FY 2008 Output: FCT Project Approved, Army Jointed the FCT effort with the Marine Corps as the lead, Initiated draft Memorandum of Agreement (MOA) between Army and Marine Corps, and Initiated Statement of Work (SOW), Key Performance Paramenters (KPPs), in 1Q. During the 2Q FY 2008 Program Manager (PM) Ammo briefed the Military Legislative Assistants and continued the draft MOA. The Army and Marine Corps signed the Memorandum of Agreement (MOA), Statement of Work (SOW), and Performance Specification, as well as initiated the drafted solicitation in the 3Q FY 2008. Both Marine Corps and Army have concurred with the SOW and Performance Specification during the 4Q FY 2008.

FY 2009 Planned Output: Initiate Technical Test Planning, complete contract award and receive initial test articles for the FCT effort by end of 1Q FY 2009. Receive additional test articles, initiate test efforts by end of 3Q FY 2009. Complete Phase I Down-selection of the FCT efforts.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Transportable Plasma Waste to Energy System (Air Force)	1.164	1.689		

Outcome: To provide a 10-ton per day system which can efficiently and economically dispose of the entire waste stream in an environmentally sound manner. Air Force Special Operations Command (AFSOC) A7AV (Environmental) at Hurlburt Field, Florida will evaluate an advanced waste to energy system developed by PyroGenesis a Canadian company located at Montreal, Canada. Current methods typically involve expensive contracts with local waste haulers that remove and transport the waste to a landfill. At remote locations, open pit burning is usually involved, with a myriad of operational security, environmental health, and other serious exposure risks to our troops. Additionally, in many remote locations, gravel is a valuable asset that is not locally available, and troops are put at risk from IEDs and ambushes when transporting gravel to the remote location. Executive Order 13423 mandates the Federal Government reduce energy consumption, increase the use of green products, reduce green house gases, and divert or reduce solid waste. The Plasma Waste to Energy System will meet all these goals, while producing electricity and valuable by-products (i.e. gravel and metal ingots). This compact, land-based system will accept any type of gaseous, liquids or solid without the need for pre-sorting, including hazardous waste, food waste, biological/medical waste solid waste including, tires, metal, and petroleum sludge and is a net energy producer.

FY 2008 Output: Contracted for the test article, ordered parts and begin fabrication of the system.

FY 2009 Planned Output: Complete fabrication of the system during the 3Q FY 2009, Train personal and commence limited day to day operations.

FY 2010 Planned Output: Full operational status. Completion date and publishing of the Final Report in 2Q FY 2010. Procurement.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Three-Dimensional (3D) Visualization of the Battlespace (Army)	0.821	1.657		

Outcome: Test the Arisawa three-dimensional (3D) stereoscopic Liquid Crystal Displays (LCD) to provide Force XXI Battle Command Brigade and Below - Blue Force Tracking Systems with high-resolution 3D mapping and tactical data display capability. Validate the ability of Arisawa displays to enhance visualization capabilities of C2 software, built with commercial-off-the shelf applications. Warfighters can immerse themselves in the terrain and tactical data during mission planning, situational awareness and after-action reviews. Research Development Test and Evaluation (RDT&E) Potential Savings of $12.000 million. Contractor has spent over $10.000 million in developing/testing/debugging their system. Similar to many hardware/software products, the contractor will continue to invest in improvements estimated over $12.000 million in FY 2008. If the Foreign Comparative Testing (FCT) verifies all claims, there is great potential to apply this technology to various Army Battle Command System (ABCS) and intelligence efforts beyond the basic application identified for dramatically increasing the potential RDT&E cost avoidances. Potential Manufacturing Savings of $10.000 million. Both hardware and software products are commercially available.

FY 2008 Output: Began the test planning activities and contract/acquisition planning.

FY 2009 Planned Output: Phase II of the testing will focus on the usability and human factors of the Arisawa technology with the ABCS in Tactical Operations Center (TOC) and On the Move (OTM)applications using the resources in the Communications Electronics Research, Development & Engineering Center (CERDEC) Command & Control Directorate (C2D) C4ISR Automated Virtual Environment (CAVE) facility. Phase III testing will be conducted at Fort Dix, NJ, testing will be conducted by CERDEC Product Manager C4ISR. The focus of Phase III will be suitability of use in a field environment and human factors issues related to field use.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
5.0-Inch Steel Strip Laminate (SSL) Rocket Motor Case (Navy)	0.400	1.435		

Outcome: A successful project will provide the U.S. Navy /USMC the flexibility to use Zuni 5.0-Inch Rockets during shipboard operations. This project will demonstrate the capability of the Steel Strip Laminate (SSL) rocket motor case technology that may provide potential safety improvements to the Zuni Rocket System. At present, shipboard use of the Zuni requires a waiver because the current system is not Insensitive Munitions (IM)-compliant. The primary outputs and efficiencies to be demonstrated in the FCT are: (1) enhanced IM compliance of the rocket motor using the SSL Case in Fast and Slow Cook-Off environments; (2) no degradation of performance and operational use; (3) additional flexibility in using the Zuni during shipboard operations for the Navy/Marine Corps; and (4) avoid RDT&E costs of $6.000 million.

FY 2008 Output: Contractor held Design Review, modified tooling, and manufactured/delivered cases. Contractor submitted RFDs to accept as-built SSL Cases. Obtained Interim Hazard Classification. Created test plans and began routing for approval through IM Review Board, Naval Ordnance Safety and Security Activity (NOSSA).

FY 2009 Planned Output: Finalize/approve test plans. Conduct Test Readiness Review brief. Conduct IM and ballistic testing. Conduct Insensitive Munitions Review Board brief. Create FCT Demonstration Test Report. Hold Phase I Close-out meeting.

** Note: Phase II is contingent on successfully completion of Phase I and sponsor approval. Therefore, outputs for Phase II (Qualification) are not listed above.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
20 MM Training System for Carl Gustaf (SOCOM)		0.857	2.178	

Outcome: This project will qualify a training system for the Carl Gustaf recoilless rifle. The Carl Gustaf is the primary anti-armor and anti-personnel weapon for the US Army Special Operations Command and US Naval Special Warfare Command warfighters. Primary Outputs and Efficiencies: Using 20mm High Explosive Dual Purpose 502 sub-caliber training rounds and an 84mm weapon adapter will provide cost efficient, realistic training; while ensuring more expensive 84mm ammunition is available for mission accomplishment. The RDT&E potential savings is $3.400 million and procurement is $145.000 million. Total operations and support savings estimated at $46.000 million. Completion date is 30 Sept 2011.

FY 2008 Output: Project approved.

FY 2009 Planned Output: Contracted for test articles. Conduct test planning, prepared spend plan and summary test plan. Begin system Level 1 testing.

FY 2010 Planned Output: Continue system Level 1 testing. Conduct system Level 2 testing. Integration hardware. Conduct minimal safety testing to obtain safety releases. Type classification for limited production units. Conduct limited user testing.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
25 MM Round for Joint Strike Fighter (JSF)/F-35 (Air Force)		1.057	0.330	

Outcome: This project will qualify this 25mm round for the gun to be used on the JSF. A Dual-purpose 25mm x137 medium caliber ammunition round manufactured by RWM Schweiz (Rheinmetall Defense) AG in Switzerland will be tested by the 28th Test Wing at Eglin AFB. The primary outputs and efficiencies to be evaluated is to satisfy the USAF F-35/A aircraft's unique gun system requirement of defeating both soft targets and lightly armored vehicles with a single ammo type. No round is currently qualified to meet the unique lethality requirements for the JSF.

FY 2009 Planned Output: A request will be sent to RWM Schweiz for the delivery of 100 rounds. These rounds will be utilized in early phases of the program to perform a preliminary evaluation of the gun/ammo interface, to validate round integrity, and to assess projectile effectiveness. After successfully completing the first phase of the FCT, an addition 10,000 rounds will be acquired from the vendor in order to perform the qualification test.

FY 2010 Planned Output: Initiate Weapons Systems Explosive Safety Review Board (WSESRB)/Non-Nuclear Munitions Safety Board (NNMSB) clearance, prepare and publish Decision Package.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
COSMO-SkyMed Constellation Evaluation (Air Force)		1.029	0.470	

Outcome: COSMO-SkyMed a constellation of four Synthetic Aperture Radar (SAR) satellites manufactured by EGEOS in via Cannizzaro, Italy that will provide a rapid revisit, 24 hour, global coverage of the planet a capability which does not yet exist in the commercial remote sensing arena. Resolutions vary between sub-meter through several tens of meters, depending on acquisition mode, and multi-polarization modes will provide different aspects of each target. The primary outputs and efficiencies to be evaluated are the improvements it will make to our imaging capabilities. Current technology involving commercial SAR imagery is limited by resolution, polarization, and global surveillance coverage. Current operational commercial SAR satellites image down to 8 meters in resolution. COSMO-SkyMed is anticipated to provide sub-meter resolution images with a rapid revisit, 24 hour, global coverage of the planet. The ability to accomplish this is based on four Cosmo satellites in the same orbit path, and will operate in a cooperative manner. For the warfighter and mission planner, this capability will provide four times the surveillance capability at an eighth of the resolution, along with quad polarization. No other commercial SAR satellite platform can offer this capability or operational redundancy. Additionally, current commercial SAR satellites are nearing the end of their lifespan, and need to be replaced by more advanced systems.

FY 2009 Planned Output: Test planning occurred during 2Q FY 2009. Procure and receive test article, Complete initial testing and publish report.

FY 2010 Planned Output: Complete user assessment and operational testing. Completion date and final report 4th qtr.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Enhanced Fuze for 70MM Warhead (SOCOM)		1.977	1.771	

Outcome: This project will test and evaluate an electronic time delay that has a super quick mode, which allows the pilot to change the fuze settings in-flight; to engage a wider range of targets. Special Operations Little Bird helicopter pilots are missing targets of opportunity, and shooting through targets, due to the inability to reset their rocket fuzes once airborne. Primary Outputs and Efficiencies: Total Research Development Test and Evaluation (RDT&E) cost avoidance exceeds $67.000 million. An Indefinite Delivery Indefinite Quantity (IDIQ) contract was established for 70mm rockets and fuzes, and will be used by Special Forces for the next 20 years. Completion date is estimated for 30 Sep 2011.

FY 2008 Output: Proof of concept demonstration was successfully conducted. Received project approval.

FY 2009 Planned Output: Receive project funding. Contracted for test articles.

FY 2010 Planned Outputs: Receive test articles and conduct Technical and Safety testing. Obtain Safety Release.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
H-53 Low Cost and Reliable Generator Control Unit (Navy)		1.557	0.275	

Outcome. This project will test a low cost and higher reliability Generator Control Unit (GCU) to be used on H-53 aircraft. H-53 Program needs a second source/replacement for the current obsolete Bendex 21B17-6 for the H-53 Aircraft GCU. Program will evaluate a state-of-the-art GCU currently used on foreign aircraft that provides greater reliability. The primary outputs and efficiencies to be demonstrated in the FCT are: (1) project unit cost goal is $5-6 Thousand; (2) reliability goal is 16 thousand Mean Time Between Failure (MTBF) hours; and (3) cost savings worth more than $8.000 million.

FY 2009 Planned Output: Complete Sources Sought Review for H-53 Generator Control Unit. Obtain sole-source Justification and Authorization (J&A), Initiate Request for Proposal (RFB) to perspective vendor, complete contracting efforts and begin FCT qualification effort. Complete Generator Control Unit qualification, test on H-53 aircraft, issue final report.

FY 2010 Planned Output: Begin Production of H-53 GCUs.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Improved Ownship Speed Sensing (Navy)		0.557	0.192	

Outcome: This project is to test a rodmeter that is of superior design in terms of configuration (e.g. shark fin or flush mount), electronics and materials (able to withstand higher stress). The current rodmeters used are based on 1950s design and materials, that are breaking under stress of own ship maneuvering and obsolence. The Navy will test non-developmental items from Aeronautical & General Instruments, LTD, United Kingdom. The primary outputs and efficiencies to be demonstrated in the FCT are: (1) improve the performance of the overall navigation system by reducing position and velocity errors; (2) allow a submarine to operate in a stealthier fashion, (3) allow a submarine to operate longer in the littoral regions; and (4) avoid potential added Research Development Test and Evaluation (RDT&E) costs of $1.000 million.

FY 2009 Planned Output: Received initial funding late 1Q FY 2009. Procurement of test articles anticipated 3Q FY 2009. Complete test planning procedures/development for land based testing 3Q FY 2009 and at-sea test planning 4Q FY 2009. Conduct land based (water flow tank) 4Q FY 2009.

FY 2010 Planned Output: Install item on surface ship test platform and conduct performance testing at-sea late 1Q FY 2010. The technical test report and project closeout report are anticipated to be completed by 4Q FY 2010.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
LAW Rocket Motor IM (Insensitive Munitions) Improvement (Navy)		1.757	1.358	

Outcome: A successful FCT will provide the United States Marine Corps (USMC) with a fully IM compliant Light Anti-Tank Weapon (LAW) system to increase overall safety and reduce the severe logistical burden associated with storage and transportation of a non-IM compliant munition. A two year project under sponsorship of the FCT and Marine Corps Systems Command (MARCORSYSCOM), Program Manager (PM) Ammunition. Projected testing completion date will be CY 2010. The primary outputs and efficiencies to be demonstrated in the FCT are: (1) Improved safety for system operator/handler; (2) Reduce severity of reaction to IM environments; (3) Minimize collateral damage caused by accidental rocket motor initiation; (4) Significantly reduce the logistic burden of transporting non-IM compliant munitions; and (4) Minimize Research Development Test and Evaluation (RDT&E) costs of $5.000 Million while providing a Return on Investment (ROI) of 9:1.

FY 2009 Planned Output: Initiate contract preparation and complete contract award during 2Q FY 2009. Initiate Technical Test Planning during 2Q FY 2009 and anticipate completion during 4Q FY 2009. Fabrication of Test Articles to during 3Q FY 2009 and delivery anticipated during 4Q FY 2009. Initial IM Testing scheduled to begin during 4Q FY 2009.

FY 2010 Planned Output: Initial IM Testing scheduled to complete during 1Q FY 2010. Qualification Testing scheduled during 3Q FY 2010. User Evaluation scheduled to begin in 2Q FY 2010 and complete by the end of 3Q FY 2010. Receive certification and complete test report, Close-Out Report and Milestone C Decision during 4Q FY 2010.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
M1A1 Crew Cooling System (Navy)		1.607	0.583	

Outcome: A successful FCT will provide the United States Marine Corps (USMC) with an adequate cooling solution to the entire M1A1 crew. A two year project under sponsorship of the FCT and Marine Corps Systems Command (MARCORSYSCOM), Program Manager (PM) Tank Systems. Projected testing completion date will be FY 2010. The primary outputs and efficiencies to be demonstrated in the FCT are: (1) Significantly increase the overall safety of M1A1 crewmembers, thus resulting in improved mission endurance and operational effectiveness; (2) Greatly reduce the logistical burden associated with rotating tank crews due to rapid dehydration; and (3) Avoid RDT&E and Procurement costs of $5.000 million and $10.000 million while providing a Return on Investment (ROI) of 22:1.

FY 2009 Planned Output: Initiate contract preparation and complete contract award during 2Q FY 2009. Initiate Technical Test Planning during 2Q FY 2009 and anticipate completion during 3Q FY 2009. Fabrication of Test Articles to begin during 3Q FY 2009 and delivery anticipated by the end of 4Q FY 2009.

FY 2010 Planned Output: Lab/Integration testing scheduled to begin in 1Q FY 2010 and complete by middle of 2Q FY 2010. M1A1 Operational Testing scheduled to begin in 2Q FY 2010 and complete by the end of 3Q FY 2010. Complete Test Report, Close-Out Report and Milestone C Decision during 4Q FY 2010.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Multi-fuel Submersible Outboard Engines (SOCOM)		0.957	0.633	

Outcome: This project integrates patented Italian air-assisted direct-injection fuel delivery systems, into commercial off-the-shelf, lightweight, submersible outboard engines; to produce non-gasoline burning outboard engines capable of using multiple fuels. Primary Outputs and Efficiencies: Special mission units have an urgent requirement to replace their submersible outboard engines to support their many littoral missions. DOD Directive 4140.25 Management Policy for Energy Commodities and Related Services mandates the conversion of combat systems to common, less combustible fuels by 2010. This project will ensure compliance to this DOD Directive. Potential RDT&E savings for this engine is $8.000 million and the collective operations and support cost savings are $31.250 million. Completion date is 30 Sept 2011.

FY 2009 Planned Output: Funding received. Conducted project planning. Preparations for Phase I proof of concept: Prototype assembly. Prototype test and procure contract for test articles.

FY 2010 Planned Output: Receive test articles Phase II, install Piaggio injection system, conduct dynamometer test of modified engine, test modified engine, and make engine modifications. Make final engine modifications.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	

Photonics Mast Tech Insertion on the Virginia Class Submarine (Navy)		1.457	1.155	

Outcome: A successful FCT project will provide the USN an alternative Photonics Mast for the VIRGINIA Class and OHIO Class SSGN submarines. The purpose of this effort is to correct a reliability shortfall with the current system that is impacting operational availability. Photonics Mast system provides the imaging, navigation, electronic warfare, and communications function for critical safety of ship and tactical intelligence applications. The current system has significant reliability and maintainability issues. This FCT will test a foreign mast that offer the potential increase in reliability and maintainability, more modular in design and lower overall cost to the Navy. The primary outputs and efficiencies to be demonstrated in the FCT are: (1) modular construction of the FCT photonics mast will allow rapid maintenance actions and replacement of functional elements of the sensor at the Intermediate Maintenance Activity (IMA) vice having to return the sensor to the factory for service; (2) the FCT technology will be upgradeable (Technology Insertion/Refresh): Implementation of High Definition Color Cameras (HDTV) will provide a much improved imagery to the operator; (3) the new system will be more reliable when compared to the legacy Kollmorgen photonics mast; and (4) avoid potential added Research Development Test and Evaluation (RDT&E) costs of over $30.000 million.

FY 2009 Planned Output: Prepare specifications and award contract. Develop test plan and test schedule. Develop and attain approval of Temporary Alteration (Temp-alt) for systems installation, integration and operational testing.

FY 2010 Planned Output: Attain approval for shipboard installation and integrations of test article. Install and integrate test article. Perform pier-side systems test and integration. Perform at-sea testing for systems evaluation and performance.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Precision Sniper Rifle (Foreign and Domestic) (SOCOM)		1.220	1.320	

Outcome: This project will evaluate sniper rifle systems that are more lethal and capable of accurately engaging enemy personnel out to ranges of 1,500 meters. Giving the Special Operations Forces (SOF) Sniper the ability to create more stand-off distance during engagements will increase survivability. This new range will also allow for peak-to-peak engagements on the mountain tops of Afghanistan in the prosecution of OCO. Primary Outputs and Efficiencies: The Precision Sniper Rifle Capabilities Development Document (CDD) is a plan to field a complete sniper system with: weapon, optics, noise and flash suppression, ammunition and support articles. This project will capitalize on the availability of recently developed sniper systems that "out perform" currently fielded SOF sniper systems, and integrate them into the Family of SOF Sniper Rifles Program. Research Development Test and Evaluation (RDT&E) cost avoidance associated with this project is $1.390 million. Completion date is 30 Sept 2010.

FY 2009 Planned Output: Prepared and issued solicitation and received proposals and product samples. Performed initial Go/No Go Testing. Perform Developmental Test and User Assessment (Phase 1). Conduct source selection.

FY 2010 Planned Output: Award contract for successful Precision Sniper Rifle Systems candidates. Receive Engineering Test Units. Perform Weapon and Ammunition Developmental Test and Safety Tests. Receive Safety Release. Conduct Developmental Test (Phase 2). Conduct User Assessment (Phase 2). Revise Precision Sniper Rifle Capability Development Document (CDD) to Capability Production Document (CPD). Prepare decision packet and FCT Close-out Report. Milestone C Decision is scheduled for 4Q FY 2010.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
Pyrolysis Solid Waste Disposal With Energy Recovery (Army)		1.849	1.430	

OSD RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

APPROPRIATION/ BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDTE, Defense Wide BA# 6	**0605130D8Z - Foreign Comparative Testing (FCT)**	**P130**

Outcome: This project will demonstrate and evaluate a containerized system that uses Pyrolysis technology to dispose of approximately 2 tons of solid waste per day within a Force Provider base camp. This technology will help reduce or eliminate the need for outside contractors to access the base camp to dispose of solid waste which reduces potential threats to the force. The primary outputs and efficiencies is the system will be self-powering reducing the need for additional fuel to operate the system, and the energy recovery of the pyrolysis will reduce the amount of fuel needed to support the base camp thereby reducing the number of fuel trucks on the road on a daily basis and allows ground commanders to focus assets normally assigned to securing fuel trucks to other more critical missions. RDT&E cost savings estimated at $9.900 million. Operations and Life-Cycle Cost avoidance/savings is estimated at $0.347 million. When fully funded, the potential annual savings is estimated at $9.716 million.

FY 2009 Planned Output: Formed Integrated Product Team (IPT). Received initial vendor proposal. Completed 3 technical design/requirements meetings with vendor. Submitted a revised Statement of Work (SOW) to the vendor. Completed staffing of the contractual Justification and Authorization (J&A), awaiting final signature.

FY 2010 Planned Output: Complete Developmental Testing at Aberdeen Test Center in the 1Q FY 2010. Operational testing will be conducted at National Training Center in 2-3Q FY 2010. The Test Report and Project Close-Out report will be completed in 4Q FY 2010. Any design changes will be incorporated, any additional required testing will be planned for, and Milestone C preparation and documentation will be scheduled to be completed in FY 2011 for a Milestone C decision.

Accomplishments/Planned Program Title:	FY 2008	FY 2009	FY 2010	
FY 2010 Plans			22.347	

FY 2010 Plan: The FCT program will continue to fund testing activities on an estimated 13 continuing projects executing $12.707 million. Remaining funding will be used to initiate new start FCT projects selected from the FY 2010 FCT proposal process. The FY 2009 final proposal selection process is scheduled for the fourth quarter FY 2009.

C. Other Program Funding Summary: Not applicable for this item.

D. Acquisition Strategy: Not applicable for this item.

E. Major Performers:

Category	Name	Location	Type of Work and Description	Award Date
Labs/Centers:				
	TBD	TBD	The majority of funding for this Program Element is forwarded directly to the Services and US Special Operations Command (USSOCOM) who manage all contracting and support requirements for the FCT projects identified in this budget exhibit (i.e., R-2a).	